

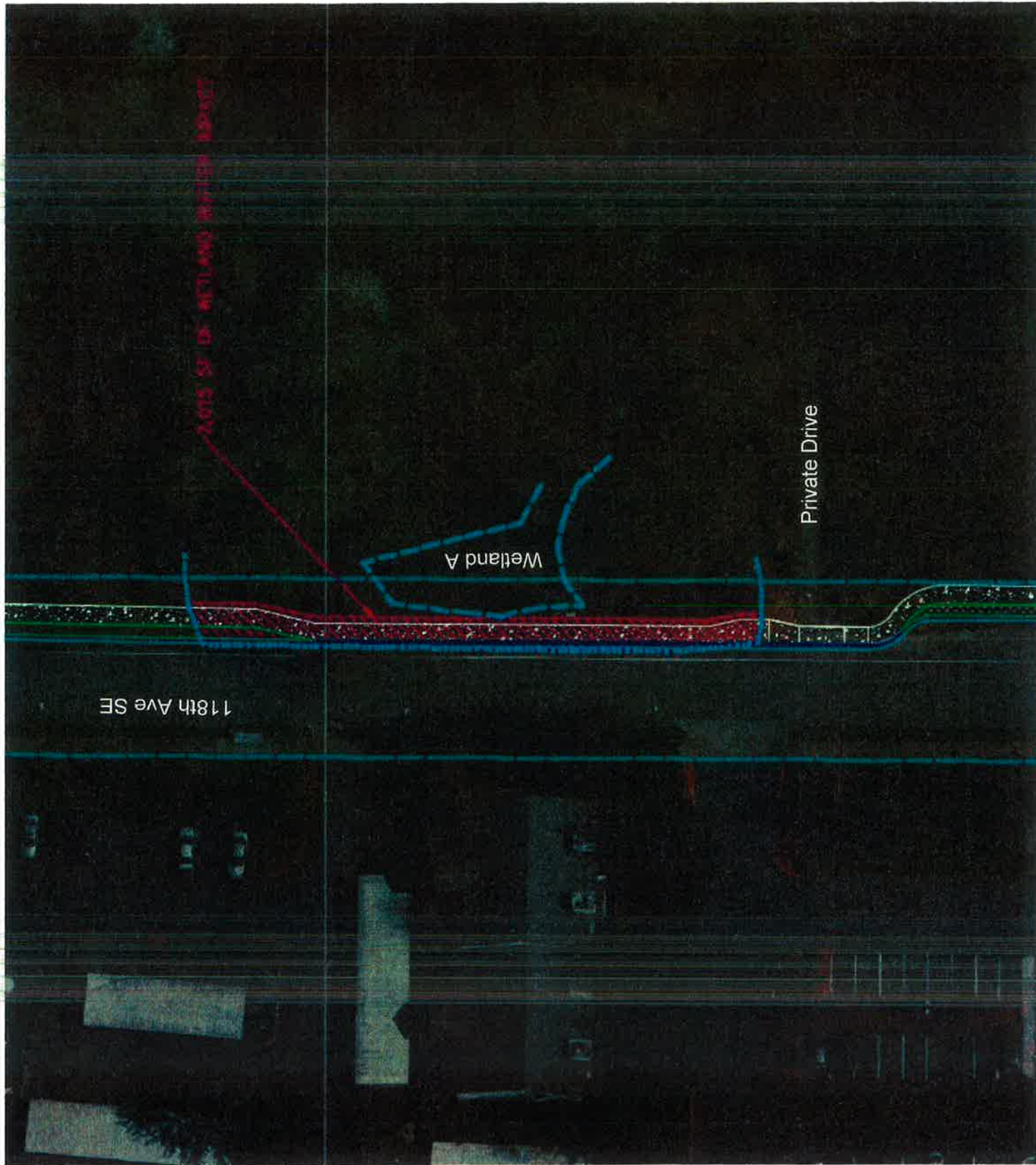


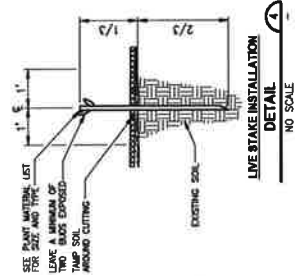
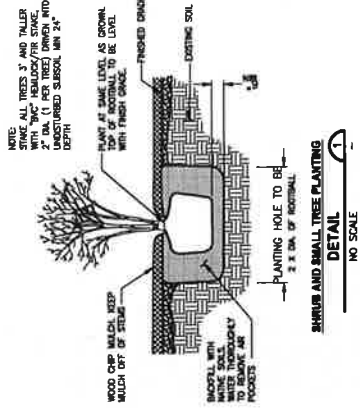
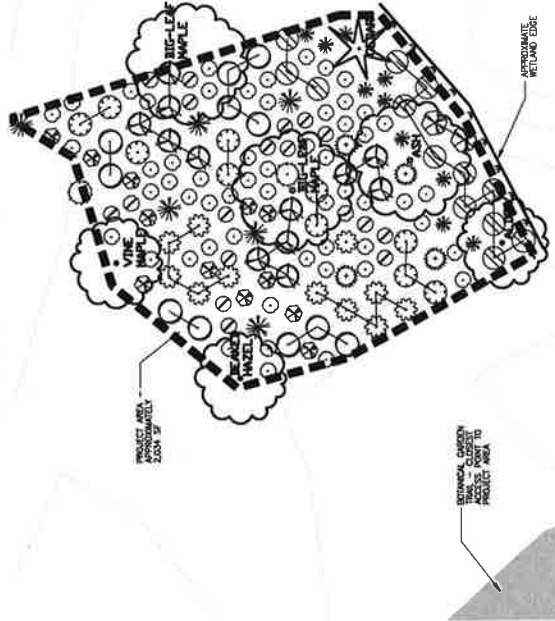
Parametrix DATE: October 9, 2017
Aerial Background by King County maps



 Project Area

Figure 1-1
Vicinity Map
118TH AVE SE SIDEWALK EXPANSION
CITY OF BELLEVUE





Planting Legend:

Symbol	Cannaceae, Nymphaeaceae	Botanical Name	Maximum Size	Notes
	12	Inside-out Flower	♂ Container	-
	17	Redwood Serril	♂ Container	-
	10	Lady Fern	♂ Container	-
	57	Sword Fern	♂ Container	-
	22	Stake (epoca of 4.5" o.c.)	4" Tall HL	2 to 3 trunks
	22	Western Serviceberry	5 Container/24" HL	-
	22	Pacific Huckleb	4" Tall HL	2 to 3 trunks
	22	Vine Maple	4" Tall HL	-
	12	Indian Plum	6" Container/24" HL	-
		Lusitana Outflow (epoca of 4.5" o.c.)		
	2	Pacific Willow	3" Dia. x 3' long live stakes	-
	13	Red-leaf Dogwood	3" Dia. x 3' long live stakes	-
	8	Trees	4" Tall HL	Not clipped or sheared
	4	Western Red Cedar	4" Tall HL	Not clipped or sheared
	4	Slake Spruce	4" Tall HL	Not clipped or sheared
	2	Western Hemlock	4" Tall HL	Not clipped or sheared
		Approximate location		
		Exiting trees to remove		

Approximate location,
Existing trees to remain

Construction Notes:

1. Contractor shall arrange to meet on site with the project representatives to discuss work hours, hours, site access, mapping, limits of work and methods. Construction estimates shall not commence until access, limits of work, and methods are approved. Contact Nancy Harris 425-432-2741.
2. Install a color bag waste to grade as a temporary erosion and sediment control (TSC) measure at bottom of slope to prevent erosion and sediment from running off into the wetland area below. TSC must be installed prior to commencing construction.
3. All plants to be saved and protected within planting area will be flagged by project representative. Nobody project representative 5 days prior to start of clearing activity.
4. Clear and remove blocky bark, rotten wood, and other unwanted vegetation as directed by project representative. Adjust plant spacing slightly to accommodate plant layout. Flag plant locations that be adjacent to site conditions.
5. All plants shall be nursery grown a minimum of one year. Plant material to be supplied by commercial nurseries. Plant substitutions are subject to approval by project representative.
6. Mitigation planting shall take place during the dormant season (October 1st to March 1st). Planting may be allowed at other times after review and written approval by project representative.
7. The contractor shall be responsible for supplying all of debris and areas and occasioned by the project.
8. Contractor shall verify the location of all debris and areas and occasioned by the project.
9. All dimensions for total height, length and condition shall be minimum requirements.
10. Clearances between the stems and site conditions shall be brought to the attention of the project representative prior to proceeding with affected work.
11. Meet only much. No 3" layer soil must only remain over the surface of the planting area.
12. Contractor shall remove all live stakes at the end of 1 year.

THE OVERALL GOAL OF THE MITIGATION IS TO REPLACE THE HABITATS AND FUNCTIONS LOST AS A RESULT OF THE PROJECT. SPECIFIC GOALS AND OBJECTIVES FORMULATED TO ACHIEVE THIS RESULT ARE PRESENTED BELOW.

THE GOALS OF THE RESTORATION ARE TO:

- ### 1.1.1.2 MITIGATION OBJECTIVES

- REMOVE THE INVASIVE SPECIES PRESENT / DENIMON

- #### 1.1.1.3 MITIGATION PERFORMANCE STANDARDS

• 100% SURVIVAL OF PLANTED SPECIES (CONTRACTOR WARRANTY)

- YEAR 2:**

- YEAR 3:**

- #### 1.1.1.4 TIMING OF WORK

1.1.1.5 MONITORING PROGRAM

THE RESTORATION SITE WILL BE MONITORED FOR A MINIMUM OF THREE YEARS, OR UNTIL PERFORMANCE STANDARDS ARE MET. IF ALL PERFORMANCE STANDARDS ARE ACHIEVED BY YEAR 3, THEN NO FURTHER MONITORING WOULD BE REQUIRED (LUC 20.25H.220(0)).

THE MAIN OBJECTIVE OF MONITORING IS TO DOCUMENT THE LEVEL OF SUCCESS IN MEETING THE INTERIM PERFORMANCE STANDARDS AND THE FINAL SUCCESS STANDARDS. MONITORING WILL BE CONDUCTED BY A QUALIFIED BIOLOGIST AND WILL BEGIN THE FIRST FULL GROWING SEASON AFTER CONSTRUCTION IS COMPLETED AND THE PLANTS HAVE BEEN INSTALLED. THE BIOLOGIST WILL PERFORM A GENERAL WALK THROUGH OF THE SITE AND DOCUMENT THE PERCENT SURVIVAL.

INVASIVE AND NATIVE PLANT COVER WILL BE ASSESSED USING LINE-INTERCEPT EVALUATIONS OF ESTABLISHED TRANSECTS THROUGH THE SITE.

MONITORING REPORTS WILL ADDRESS THE ITEMS PRESENTED IN THE PRECEDING SECTION AS WELL AS DOCUMENT PLANT SURVIVAL, SUCCESS, AND PROBLEMS, IF ANY. THE REPORTS WILL RECOMMEND PLANT SPECIES REPLACEMENTS, IF NECESSARY. PHOTOGRAPHS WILL BE SUBMITTED ANNUALLY TO DOCUMENT PLANT GROWTH AND SITE CONDITIONS. ONE MONITORING REPORT WILL BE SUBMITTED ANNUALLY FOR EACH PLANT SPECIES. THE FIRST TWO REPORTS WILL COMPAR THE AS-BUILT PLANTING WITH THE OBSERVATIONS AND RECOMMEND SPECIES REPLACEMENTS, IF NECESSARY. THESE REPORTS WILL BE SUBMITTED BY DECEMBER 1 OF THE YEAR IN WHICH MONITORING IS CONDUCTED.

MITIGATION DETAILS		SHT	MP02	OF	X
--------------------	--	-----	------	----	---



**City of
Bellevue
Police Department**



WILBURTON AREA SIDEWALK PROJECTS

Received
NOV 29 2017
Permit Processing

118th Avenue SE Sidewalk Expansion Critical Areas Report

Prepared for
City of Bellevue



November 2017

Prepared by
Parametrix

118th Avenue SE Sidewalk Expansion Critical Areas Report

Prepared for

City of Bellevue
2901 115th Ave N
Bellevue, WA 98004

Prepared by

Parametrix
719 2nd Avenue, Suite 200
Seattle, WA 98104
T. 206.394.3700 F. 1.855.542.6353
www.parametrix.com

CITATION

Parametrix. 2017. 118th Avenue SE Sidewalk
Expansion
Critical Areas Report.
Prepared by Parametrix, Seattle, WA.
November 2017.

TABLE OF CONTENTS

1.	INTRODUCTION	1-1
1.1	Site Description	1-1
1.2	Project Description	1-1
1.3	Regulatory Context	1-1
2.	METHODS.....	2-1
2.1	Existing Information	2-1
2.2	Wetland Identification and Delineation	2-1
2.2.1	Vegetation.....	2-1
2.2.2	Soils	2-2
2.2.3	Hydrology	2-2
2.3	Wetland Classification and Rating	2-2
2.4	Stream Delineation and Typing.....	2-2
2.5	Other Critical Areas	2-3
3.	WETLAND AND STREAM SURVEY RESULTS.....	3-1
3.1	Summary of Existing Information	3-1
3.2	Results of Field Survey	3-1
3.2.1	Wetland A	3-3
4.	IMPACTS AND MITIGATION	4-1
4.1	Project Impacts	4-1
4.2	Proposed Mitigation	4-1
4.2.1	Mitigation Sequencing	4-1
4.2.2	Mitigation Goals.....	4-1
4.2.3	Mitigation Objectives.....	4-2
4.2.4	Mitigation Performance Standards.....	4-2
4.2.5	Timing of Work	4-2
4.2.6	Monitoring Program	4-2
4.2.7	Methods.....	4-2
4.2.8	Reporting	4-3
5.	REFERENCES	5-1

LIST OF FIGURES

1-1	Vicinity Map	1-3
3-1	Wetlands and Sample Points	3-2

APPENDICES

A	Background Information
B	Determination Forms
C	Rating Forms
D	Site Photographs
E	Impacts and Mitigation

ACRONYMS AND ABBREVIATIONS

ACIS	Applied Climate Information System
City	City of Bellevue
Corps	U.S. Army Corps of Engineers
CWA	Clean Water Act
Ecology	Washington State Department of Ecology
FGDC	Federal Geographic Data Committee
GPS	global positioning system
HGM	hydrogeomorphic
LUC	Land Use Code
NRCS	Natural Resources Conservation Service
OHWM	ordinary high water mark
Parks	City of Bellevue Parks & Community Services
PHS	Priority Habitats and Species
RCW	Revised Code of Washington
Sea-Tac Airport	Seattle-Tacoma International Airport
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
WAC	Washington Administrative Code
WDFW	Washington State Department of Fish and Wildlife

1. INTRODUCTION

The City of Bellevue Public Works Department is planning a sidewalk expansion project along 118th Avenue SE, south of the intersection with SE Main Street. This Critical Areas Report is intended to support the City of Bellevue's review of the project and to satisfy the requirements of the Bellevue Land Use Code (LUC) concerning critical areas reports (LUC 20.25H.230). This report summarizes critical areas that occur in the project area, with detailed information about wetlands, streams, and their buffers, and describes project-related impacts and measures for mitigating potential adverse effects to these critical areas. Appendices A through E provide supplementary project information.

Methods and results of the wetland and stream investigation are detailed below. Other critical areas are addressed, as needed, in separate reports.

1.1 Site Description

The project site is located near the intersection of SE Main Street and 118th Avenue SE in the city of Bellevue, Washington (Figure 1-1). The study area for the project includes the project footprint, as well as all areas within 300 feet in which critical area buffers may extend into the project footprint, as specified in the Bellevue Land Use Code. The location of adjacent paved roads (118th Avenue SE and SE Main Street) limits the study area to the south and west of these streets because the buffers for critical areas would not extend across these roadways.

A ditch-like swale runs along the east side of 118th Avenue SE that is regularly mown. The rest of the study area to the east is forested with a mixture of native and non-native species. Adjacent land to the east comprises Wilburton Hill Park (the Bellevue Botanical Garden) and private parcels.

Critical areas within 50 feet of the project footprint were mapped by the City of Bellevue professional land survey staff. Critical areas within the study area, but beyond 50 feet, were mapped with a global positioning system (GPS) unit with sub-meter accuracy.

1.2 Project Description

The project consists of a new sidewalk along the east side of 118th Avenue SE from the intersection with SE Main Street for approximately 650 feet south to meet an existing sidewalk. The 6-foot-wide cement sidewalk will be located in the eastern right-of-way for 118th Avenue SE. In addition, a traffic curb and gutter, along with a 4-foot planter strip and bioretention swale, will be constructed. Existing rockeries will be removed along the right-of-way and the slope adjacent to the Bellevue Botanical Garden will be graded.

1.3 Regulatory Context

Wetlands and streams within the study area are subject to federal, state, and City of Bellevue regulations. At the federal level, wetlands and streams are regulated by Section 404 of the Clean Water Act (CWA), which regulates placement of fill in waters of the United States. The U.S. Army Corps of Engineers (Corps) is responsible for issuing permits under Section 404 of the CWA. Activities that affect wetlands and streams may also require a water quality certification (Section 401 of the CWA), which is implemented at the state level by the Washington State Department of Ecology (Ecology).

Under Bellevue LUC Chapter 20.25, the City designates and regulates activities within critical areas and their buffers, including wetlands and streams. Part 20.25H, Critical Areas Overlay District, describes the City's requirements for the identification, rating, and categorization of wetlands and other critical areas, as well as buffers, mitigation, performance standards, and requirements for Critical Areas Reports.



 Project Area

Parametrix DATE: October 9, 2017
Aerial Background by King County maps

Figure 1-1
Vicinity Map

118TH AVE SE SIDEWALK EXPANSION
CITY OF BELLEVUE

2. METHODS

This critical areas assessment is based on data obtained through a review of existing information and during field investigations. The goal of these efforts was to document existing information to reflect current site conditions and to collect new information necessary to delineate wetlands and streams.

2.1 Existing Information

The following sources of existing information were used in this assessment:

- King County iMAP database (King County 2017)
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory online interactive mapper (USFWS 2017)
- City of Bellevue Kelsey Creek Basin map (2009)
- Natural Resources Conservation Service (NRCS) Web soil survey (NRCS 2017)
- Climate data for King County as measured at the Seattle-Tacoma International Airport (Sea-Tac Airport) Weather Station (Applied Climate Information System [ACIS] 2017)
- Priority Habitats and Species (PHS) data from the Washington State Department of Fish and Wildlife (WDFW 2017)
- Bellevue Botanical Gardens Wetland Delineation Report (Skillings Connolly Environmental 2007)

2.2 Wetland Identification and Delineation

Wetlands are defined as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. An area must meet three criteria or exhibit at least one positive field indicator of wetland vegetation, soils, and hydrology to be considered a wetland.

Field investigations to identify and delineate wetlands and streams were performed in accordance with Bellevue LUC 20.25H.095. Project biologists used the methods specified in the Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987) and the indicators described in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Corps 2010) to identify on-site wetlands. Wetland determination data forms from the Regional Supplement (Corps 2010) were recorded for each wetland.

2.2.1 Vegetation

During the field investigations by project biologists, dominant plant species were observed and recorded on data forms for each sample plot. The dominant plants and their wetland indicator status were evaluated to determine whether the vegetation was hydrophytic. Hydrophytic vegetation is generally defined as vegetation adapted to prolonged saturated soil conditions. To meet the hydrophytic vegetation criterion, typically more than 50 percent of the dominant plants must be Facultative, Facultative Wetland, or Obligate, based on the plant indicator status category assigned to each plant species by the USFWS (Lichvar et al. 2016).

Scientific and common plant names follow currently accepted nomenclature. Most names are consistent with Flora of the Pacific Northwest (Hitchcock and Cronquist 1973), Plants of the Pacific Northwest Coast (Pojar and MacKinnon 1994), and the PLANTS Database (U.S. Department of Agriculture [USDA] 2017).

2.2.2 Soils

Generally, an area must have hydric soils to be regulated as a wetland. Hydric soil forms when soils are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper layer. Biological activities in saturated soil result in reduced oxygen concentrations that cause a preponderance of organisms using anaerobic processes for metabolism. Over time, anaerobic biological processes result in accumulation of organic soil (e.g., peat) and/or certain mineral soil color patterns, which are used as field indicators of hydric soils. Soils were examined by excavating sample plots to a depth of at least 16 inches, where feasible, to observe soil profiles, colors, and textures. Munsell® color charts (Munsell® Color 2010) were used to describe soil colors.

2.2.3 Hydrology

The project area was examined for evidence of hydrology. An area is considered to have wetland hydrology when soils are ponded or saturated consecutively for 12.5 percent of the growing season. The growing season (Sea-Tac Airport station) generally occurs from early February (February 8) to early December (December 10) (Snyder et al. 1973); ponding or saturation must be present for approximately 38 consecutive days. Primary indicators of wetland hydrology include surface inundation, sediment deposits, high water table, and saturated soils. Secondary indicators of hydrology include drainage patterns, watermarks on vegetation, and water-stained leaves.

2.3 Wetland Classification and Rating

Wetlands were classified according to the USFWS Classification of Wetlands and Deepwater Habitats of the United States (Federal Geographic Data Committee [FGDC] 2013; Cowardin et al. 1979). The Washington State Wetland Rating System for Western Washington—Revised (Hruby 2004) was used to rate wetlands and assess their functions. The City of Bellevue has adopted the Washington State Wetland Rating System (2004) for the City of Bellevue Land Use Code (LUC 20.25H.095).

2.4 Stream Delineation and Typing

The ordinary high water mark (OHWM) was determined and mapped for any streams in the study area. The OHWM, line, and elevation in streams were evaluated for compliance with criteria detailed in the Shoreline Management Act (Revised Code of Washington [RCW] 90.58.030(2)(b), Washington Administrative Code [WAC] 173-22-030(5), and Hydraulic Code Rules [WAC 220-110-020(31)]). Biologists trained in the use of ordinary high water determination methods developed by Ecology (Stockdale et al. 2016) reviewed site conditions to determine if streams were present in the study area. Streams are categorized as Type S, F, N, or O, based on their flow and capacity to support fish (LUC 20.25H.075(B)).

2.5 Other Critical Areas

In addition to wetlands and streams, the following critical areas are **regulated under the City's critical areas code**:

- Habitat Associated with Species of Local Importance
- Areas of Special Flood Hazard Areas

These critical areas will not be discussed further in this report because they are not located within 300 feet of the project footprint.

GeoDesign, Inc. will provide a geotechnical report for the City of Bellevue detailing any geological, steep slope, coal mine, or landslide hazard areas that may be present within the project vicinity.

3. WETLAND AND STREAM SURVEY RESULTS

Existing information reviewed prior to field investigations is detailed below. Field surveys were conducted on September 14, 2017 by Josh Wozniak, PWS (#1478) and Kaylee Moser. Weather conditions were mild (70 degrees Fahrenheit) and dry. There had been no measurable precipitation in several weeks. Wetland determination forms and rating forms are provided in Appendix B and Appendix C, respectively. Site photographs are located in Appendix D.

3.1 Summary of Existing Information

Existing information regarding the study area is compiled in Appendix A and summarized below.

USFWS (2017) does not identify any wetlands within the study area. However, the presence of an intermittent stream (R4SBC), a tributary to Sturtevant Creek, is identified flowing across the center of the study area. King County iMap shows no streams or wetlands mapped in the study area.

A study prepared by Skillings Connolly Environmental for the City of Bellevue identified wetlands within the adjacent Bellevue Botanical Garden property (Skillings Connolly Environmental 2007). The report identified a wetland ("Wetland B") approximately 300 feet east of the project footprint. This report determined "Wetland B" to be a palustrine forested, Category III wetland. According to this report, the wetland drains west during periods of high water, flowing approximately 200 feet west from the wetland until the topography flattens out, and flows infiltrate into the soil.

The predominant soil type mapped for the project area is Alderwood gravelly sandy loam (NRCS 2017). The Alderwood series comprises moderately well-drained soils located on glacially modified hills and ridges. Alderwood soils are not considered hydric; less than 5 percent of mapped Alderwood soil areas support wetlands (NRCS 2017).

A search of the WDFW PHS database (2017) did not indicate the presence of priority habitats or species in the study area.

3.2 Results of Field Survey

One wetland (Wetland A) was identified in the study area (Figure 3-1). A detailed description of the wetland is presented below. The NRCS (2017b) WETS table indicates drier conditions than normal for the 3 months prior to the field investigations. In addition, the delineation was conducted during the driest period of the year. As such, direct observation of wetland hydrology was not necessarily expected; therefore, the presence of secondary hydrology indicators, as well as hydric soils and hydrophytic vegetation, was used to determine wetland conditions.

Four sample points were collected within the ditch parallel to 118th Avenue SE, which indicated upland conditions in this location (see Figure 3-1 and Appendix B). No streams were identified within the study area.



3.2.1 Wetland A

Size: approximately 1 acre

City of Bellevue and Ecology Rating: Category III

Buffer: 60 feet

USFWS Classification: Palustrine forested\scrub-shrub

HGM Classification: Depressional\Slope

Wetland A is a forested wetland that extends from the ditch along the east side of 118th Avenue SE several hundred feet into Wilburton Hill Park and is contiguous with the wetland previously mapped in the park (Skillings Connolly Environmental 2007; see description above). A 10-foot-wide wetland swale, dominated by Himalayan blackberry (*Rubus armeniacus*), connects these wetland subunits, which results in one contiguous wetland. Water appears to be impounded within a depression in the westernmost portion of the wetland, which outlets through the wetland swale towards 118th Avenue SE, eventually discharging to the roadside ditch. Groundwater expression further augments hydrology in the lower portion of the wetland, with sloped wetland areas occurring above and north of the swale. During the field investigation, the swale was vegetated with hydrophytic plants and showed no scour, bed, or banks indicative of a stream. Hydric soils were contiguous throughout the wetland.

The wetland is dominated by Scouler's willow (*Salix scouleriana*), Pacific nine-bark (*Physocarpus capitatus*), Himalayan blackberry, English ivy (*Hedera helix*), and reed canarygrass (*Phalaris arundinacea*) near 118th Avenue SE. Deeper within the park, Oregon ash (*Fraxinus latifolia*), red alder (*Alnus rubra*), slough sedge (*Carex obnupta*), and lady fern (*Athyrium cyclosorum*) become dominant species. The wetland swale connecting these areas is dominated by Himalayan blackberry and reed canarygrass. Photographs of the wetland are included in Appendix D.

Soils sampled within Wetland A meet the indicators for Depleted Matrix (F3) and Redox Dark Surface (F6) (see data forms SP-3 and SP-4, Appendix B).

No water table or saturation was present during the September 2017 field investigation; however, primary hydrologic indicators (surface soil cracks and stunted/stressed plants) were present.

Wetland A is considered a palustrine forested and scrub-shrub wetland according to the USFWS classification method, and a depressional and sloped wetland according to the hydrogeomorphic (HGM) method.

Wetland A is rated a Category III wetland according to the City of Bellevue (LUC 20.25H.095B) (see rating form, Appendix C). The wetland scored 46 points on the Ecology (Hruby 2004) rating form for Western Washington (22 points for water quality, 8 points for hydrologic functions, and 16 points for habitat functions) and is rated a Category III wetland. The City of Bellevue requires a 60-foot standard buffer for Category III wetlands with a habitat score lower than 20 points (LUC 20.25H.095C).

The buffer is intact and vegetated within the park, but it is heavily altered and disturbed in the road right-of-way. In the park, the buffer is forested and contains a mixture of native and non-native species. In the road right-of-way, the buffer is a mown, maintained ditch. Non-native grasses and Himalayan blackberry dominate this area, along with pockets of field horsetail (*Equisetum arvense*) and soft rush (*Juncus effusus*). The ditch is lined with quarry spalls that have been partially vegetated and covered in sediment in some areas. The functioning buffer ends to the east at the edge of the pavement on 118th Avenue SE.

4. IMPACTS AND MITIGATION

4.1 Project Impacts

The proposed sidewalk expansion project will not fill or dredge wetlands or streams. The project will displace 2,015 square feet of existing wetland buffer (see Figure E-1, Appendix E). This buffer is currently highly degraded: vegetation is dominated by invasive and other non-native species; the ground surface contains garbage and other debris that runs off the roadway; and the area is regularly mown and cleared to maintain drainage. Overall, the buffer of Wetland A that will be affected provides minimal habitat functions.

4.2 Proposed Mitigation

4.2.1 Mitigation Sequencing

After the boundary of Wetland A was delineated, the project team redesigned the construction footprint to avoid direct impacts to the wetland and to minimize impacts to the buffer.

Following project completion, a part of the existing vegetated ditch portion of the buffer will be restored by constructing a new stormwater bioretention swale. However, due to the construction of the sidewalk within the buffer, these restored areas are not included in the compensatory mitigation approach discussed below.

Disturbed critical area buffers require a replacement ratio of one-to-one (LUC 20.25H.105.C.3). To compensate for the 2,015 square feet of unavoidable impacts to the wetland buffer, the City will enhance an equivalent area of buffer in an adjacent wetland located outside of the road right-of-way in Wilburton Hill Park (see Figure 4, Appendix E). The City of Bellevue Parks & Community Services (Parks) staff reviewed possible locations of this restoration work and selected a wetland buffer dominated by an invasive plant (Himalayan blackberry). The remainder of the buffer and the wetland in the vicinity is dominated by native species. As such, this restoration work will both enhance native habitat within the buffer area to be restored, and add resiliency to the remainder of the wetland and buffer by eliminating an isolated invasive species infestation. The work will enhance short- and long-term habitat conditions through promoting native species coverage and supporting the re-establishment of diverse native forested conditions. At a minimum, the proposed buffer mitigation offsets the functions lost as a result of project impacts and likely exceeds them through short- and long-term habitat improvements.

The proposed buffer restoration area is associated with a wetland that is part of a wetland complex that includes Wetland A. The mitigation site is in the same basin and is geographically close (within 300 feet) to the affected wetland buffer. There is currently a land use encroachment issue into Wilburton Hill Park that includes Wetland A and its buffer. Until this issue is resolved, Parks staff prefer to not propose any modifications to Wetland A or its buffer (including restoration).

4.2.2 Mitigation Goals

The goals of the restoration are to:

- Enhance native vegetation conditions
- Promote the establishment of native forest
- Add resiliency to adjacent native forests and wetlands

4.2.3 Mitigation Objectives

The objectives of the restoration work are to:

- Remove the invasive species present (primarily Himalayan blackberry)
- Replant the restored area with native species suitable for the conditions of the wetland buffer with a long-term objective of helping to establish a native forest with a diverse native understory
- Maintain the site to support the objectives stated above

4.2.4 Mitigation Performance Standards

Year 1:

- 100% survival of planted species (contractor warranty)
- Less than 5% Himalayan blackberry or other King County Class A, B, or C noxious weeds

Year 2:

- 75% survival of planted species or natural recruitment of suitable native species to meet plant tally
- Less than 5% Himalayan blackberry or other King County Class A, B, or C noxious weeds

Year 3:

- 50% cover of native woody species in restored area
- Less than 5% Himalayan blackberry or other King County Class A, B, or C noxious weeds

4.2.5 Timing of Work

This restoration work will occur in 2018, with the exact timing based on suitable climatic conditions for planting. If planting is not completed by early spring, it will be delayed until the fall to support optimal plant establishment.

4.2.6 Monitoring Program

The restoration site will be monitored for a minimum of 3 years, or until performance standards are met. If all performance standards are achieved by Year 3, then no further monitoring would be required (LUC 20.25H.220(D)).

4.2.7 Methods

The main objective of monitoring is to document the level of success in meeting the interim performance standards and the final success standards. Monitoring will be conducted by a qualified biologist and will begin the first full growing season after construction is completed and the plants have been installed. The biologist will perform a general walk-through of the site and document the percent survival.

Survival of plantings will be based on comparisons with as-built drawings. Data documenting plant survival and health will be collected each time the site is monitored. Photographs will be taken to document conditions during that monitoring year.

Invasive and native plant cover will be assessed using line-intercept evaluations of established transects through the site.

4.2.8 Reporting

Monitoring reports will address the items presented in the preceding section as well as document plant survival success and problems, if any. The reports will recommend plant species replacements, if necessary. Photographs will be included to document existing site conditions. One monitoring report will be submitted annually and will present the monitoring results for that growing season. The first two reports will compare the as-built plans to the field observations and recommend species replacements, as necessary. These reports will be submitted by December 1 of the year in which monitoring is conducted.

5. REFERENCES

- ACIS (Applied Climate Information System). 2017. Climate Data for King County, Washington. Seattle Sand Point Weather Station. Available at: <http://agacis.rcc-acis.org/?fips=53061>.
- Corps (U.S. Army Corps of Engineers). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region. U.S. Army Corps of Engineers Engineer Research and Development Center, Vicksburg, Mississippi.
- Cowardin, L.M., W. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, Office of Biological Service. Washington D.C. FWS/OBS-79/31.
- Environmental Laboratory. 1987. Corps of Engineers Wetland Delineation Manual. Technical Report Y 87-1, Environmental Laboratory, Department of the Army, Waterways Experiment Station, Vicksburg, Mississippi.
- FGDC (Federal Geographic Data Committee). 2013. Classification of Wetlands and Deepwater Habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC.
- Hitchcock, C.L., and A. Cronquist. 1973. Flora of the Pacific Northwest. University of Washington Press. Seattle, Washington.
- Hruby, T. 2004. Washington State Wetland Rating System for Western Washington. Washington State Department of Ecology Publication Number 04-06-025, published August 2004.
- King County. 2017. iMap interactive mapping tool. Available at: <http://www.kingcounty.gov/services/gis/Maps/imap.aspx>.
- Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1–17. Published 28 April 2016. ISSN 2153 733X.
- Munsell® Color. 2010. Munsell soil color charts with genuine Munsell color chips. Grand Rapids, Michigan.
- NRCS (Natural Resources Conservation Service). 2017. Web soil survey online interactive mapper. Available at: <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>. Accessed May 2017.
- Pojar, J., and A. MacKinnon, editors. 1994. Plants of the Pacific Northwest Coast: Washington, Oregon, British Columbia, and Alaska. Lone Pine Press, Vancouver, British Columbia, Canada. June 1, 1994.
- Skills Connolly Environmental. 2007. Bellevue Botanical Gardens Wetland Delineation Report. Prepared for City of Bellevue. December 21, 2017.
- Snyder, D.E., P.S. Gale, and R.F. Pringle. 1973. Soil Survey of King County Area, Washington. Soil Conservation Service, United States Department of Agriculture. Washington, D.C.

Stockdale, E., P. Anderson, S. Meyer, and P. Olson. 2016. Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State. Washington State Department of Ecology Publication No: 16-06-029. Olympia, Washington. October 2016.

USDA (U.S. Department of Agriculture). 2017. The PLANTS Database. National Plant Data Center, Baton Rouge, Louisiana. Available at: <http://plants.usda.gov>.

USFWS (U.S. Fish and Wildlife Service). 2017. National Wetlands Inventory (NWI) online interactive mapper. Available at: <http://www.fws.gov/wetlands/>.

WDFW (Washington State Department of Fish and Wildlife). 2017. PHS on the Web: An interactive map of WDFW priority habitats and species information for project review. Available at: <http://wdfw.wa.gov/mapping/phs>.